

Claims

- [c1] 1. A robotic data storage library with soft power capability, the library comprising:
- a plurality of storage locations, each capable of holding at least one data storage element;
 - a data transfer interface for receiving a data storage element and establishing a communication path with a data storage element so that data can be transferred between the data storage element and a host computer;
 - a transport unit for moving a data storage element between one of said plurality of storage locations and said data transfer interface;
 - a power supply for providing power to a component of the library;
 - a power switch switchable between an ON state and an OFF state; and
 - a power controller for monitoring said power switch for a transition between said ON state and said OFF state and after detecting a transition of said power switch between said ON state and said OFF state, controlling the application of power to said component.
- [c2] 2. A library, as claimed in claim 1, wherein:

said power controller comprises means for terminating the application of power to said component after a fixed amount of time has expired since detecting a transition of said power switch from said ON state to said OFF state.

- [c3] 3. A library, as claimed in claim 1, wherein:
said power controller comprises means for terminating the application of power to said component after a variable amount of time has expired since detecting a transition of said power switch from said ON state to said OFF state.
- [c4] 4. A library, as claimed in claim 1, wherein:
said power controller comprises means for delaying the application of power to said component for a period of time after detection of a transition of said power switch from said OFF state to said ON state.
- [c5] 5. A library, as claimed in claim 1, wherein:
said power controller comprises means for sequencing a power output of said power supply with a second power output of a second power supply.
- [c6] 6. A library, as claimed in claim 1, wherein:
said power supply comprises a power input interface for receiving power from a power source and a power output

interface for providing power to components of the library.

- [c7] 7. A library, as claimed in claim 1, wherein:
said power switch comprises a user interface that allows an individual to transition said power switch between said ON state and said OFF state.
- [c8] 8. A library, as claimed in claim 1, wherein:
said power switch comprises an interface that allows an external device to transition said power switch between said ON state and said OFF state.
- [c9] 9. A library, as claimed in claim 8, wherein:
said interface comprises a host computer interface that allows a host computer to transition said power switch between said ON state and said OFF state.
- [c10] 10. A library, as claimed in claim 8, wherein:
said interface comprises an uninterruptible power supply interface that allows an uninterruptible power supply to transition said power switch from said ON state to said OFF state.
- [c11] 11. A robotic data storage library with soft power capability, the library comprising:
a plurality of storage locations, each capable of holding at least one data storage element;

a data transfer interface for receiving a data storage element and establishing a communication path with a data storage element so that data can be transferred between the data storage element and a host computer;

a transport unit for moving a data storage element between one of said plurality of storage locations and said data transfer interface;

a power supply for providing power to a component of the library;

a power switch switchable between an ON state and an OFF state;

a power controller for monitoring said power switch for a transition from said OFF state to said ON state and, after detecting a transition of said power switch from said OFF state to said ON state, delaying the application of power to said component for a period of time after detection of said transition of said power switch from said OFF state to said ON state.

[c12] 12. A library, as claimed in claim 11, wherein:

said power supply comprises a first power supply comprising a first power output for providing power to said component of the library and a second power supply comprising a second power output for providing power to a second component of the library.

- [c13] 13. A library, as claimed in claim 12, wherein:
said power controller is adapted to sequentially enable
said first power output of said power supply and said
second power output of said second power supply to
provide power to said component and said second com-
ponent after detecting said transition of said power
switch from said OFF state to said ON state.
- [c14] 14. A library, as claimed in claim 13, wherein:
said first power output of said first power supply and
said second power output of said second power supply
are electrically connected to a common bus for providing
power to said component and said second component.
- [c15] 15. A library, as claimed in claim 11, wherein:
said power controller is adapted to cause a delay in the
application of power to said component after detecting
said transition of said power switch from said OFF state
to said ON state until after applying power to a second
component.
- [c16] 16. A library, as claimed in claim 11, wherein:
said power controller is adapted to cause a delay in the
application of power to said component by controlling an
output of said power supply.
- [c17] 17. A library, as claimed in claim 11, wherein:

said power controller is adapted to cause a delay in the application of power to said component by communicating with said component via a network.

- [c18] 18. A robotic data storage library with soft power capability, the library comprising:
- a plurality of storage locations, each capable of holding at least one data storage element;
 - a data transfer interface for receiving a data storage element and establishing a communication path with a data storage element so that data can be transferred between the data storage element and a host computer;
 - a transport unit for moving a data storage element between one of said plurality of storage locations and said data transfer interface;
 - a power supply for providing power to a component of the library;
 - a power switch switchable between an ON state and an OFF state;
 - a power controller for monitoring said power switch for a transition from said ON state to said OFF state and after detecting a transition of said power switch from said ON state to said OFF state, issuing a power termination message to said component concerning the termination of the application of power to said component.

- [c19] 19. A library, as claimed in claim 18, wherein:
said power controller comprises means for terminating
the application of power to said component after a fixed
amount of time has expired since issuing said power ter-
mination message to said component.
- [c20] 20. A library, as claimed in claim 18, wherein:
said power controller comprises means for terminating
the application of power to said component after a vari-
able amount of time has expired since issuing said
power termination message to said component.
- [c21] 21. A library, as claimed in claim 20, wherein:
said means for terminating comprises means for chang-
ing said variable amount of time from a first value to a
second value that is greater than said first value if a re-
quest for an extension of time is received from said
component before expiration of said variable amount of
time when said variable amount of time has said first
value.
- [c22] 22. A library, as claimed in claim 21, wherein:
said means for terminating comprises means for issuing
a revised power termination message to said component
indicating a change in said variable time from a first
value to a second value.

- [c23] 23. A library, as claimed in claim 18, wherein:
said power supply provides power to said power controller independent of supplying power to said components.
- [c24] 24. A library, as claimed in claim 18, wherein:
said power controller comprises non-volatile data storage for storing a boot-strap program.
- [c25] 25. A library, as claimed in claim 18, wherein:
said power controller comprises a network for communicating with said component.
- [c26] 26. A library, as claimed in claim 25, wherein:
said network comprises a CAN network.
- [c27] 27. A library, as claimed in claim 25, wherein:
said network comprises an IIC network.
- [c28] 28. A library, as claimed in claim 18, wherein:
said power controller comprises means for monitoring the power output by said power supply.
- [c29] 29. A library, as claimed in claim 18, further comprising:
a second plurality of storage locations for storing data storage elements;
a second drive;
a second power supply for providing power to a second

component of the library; and
a slave power controller for receiving a master-slave message from said power controller,
wherein said slave power controller controls the application of power to said second component of the library after receiving said master-slave message from said power controller.

[c30] 30. A library, as claimed in claim 29, wherein said master-slave message comprises said message.

[c31] 31. A method for providing soft power capability in a robotic data storage library comprising:
providing a data storage library comprising a plurality of storage locations, each capable of holding at least one data storage element, a data transfer interface for receiving a data storage element and establishing a communication path with a data storage element so that data can be transferred between the data storage element and a host computer, a transport unit for moving a data storage element between one of said plurality of storage locations and said data transfer interface, a power supply for providing power to a component of the library, and a power switch switchable between an ON state and an OFF state;
monitoring said power switch for a transition between said ON state and said OFF state; and

controlling the application of power to said component after detecting said transition between said ON state and said OFF state.